



February 2013

IOWA STEM UPDATE

A monthly newsletter from the Iowa Governor's STEM Advisory Council

STEM Faculty a Potent Resource



U of I Professor Gina Schattman (far right) shares her knowledge at the National Science & Engineering Festival in Washington, D.C.

A recent survey conducted on behalf of the Governor's STEM Advisory Council by the administrative team found that 50 percent of Iowa's higher education STEM faculty regularly provide STEM-related educational outreach to their communities above and beyond their normal teaching duties. Of the 765 STEM professors answering the survey, conducting camps or providing hands-on workshops to K-12 teachers and students were the preferred methods in which Iowa's STEM faculty provided outreach. Community college, private college and Regent university faculty were all equally likely to participate in outreach. Those in the

fields of earth science, technology, computer science and environmental science were more likely to engage in outreach activities while life sciences and mathematics educators were slightly less likely to do so on average, citing lack of knowledge of outreach opportunities available to them. "Iowa's higher education faculty are a key ingredient in STEM education reform in our state," said Jeff Weld, executive director for the Governor's STEM Advisory Council. "There is so much talent there and so much activity, but statistically we're just halfway to full engagement. Imagine the power of fully connecting our best and brightest STEM thinkers to their communities!" A report of findings will be available at www.iowaSTEM.gov in early March.

STEM Scale-Up Builds Change

Through the efforts of the Governor's STEM Initiative, *Engineering is Elementary* (EiE) and other STEM programming are changing the way students learn. On its second Saturday offering, volunteer and project director of Education Brainstorm Paulette Wiley is providing a STEM Scale-Up program to any interested student from three different elementary and middle schools (King, Moulton and Carver) in Des Moines. She persuaded two local science teachers—Yvette Sutton from SCABO, a Des Moines alternative school, and Deb Alexander, a teacher from Stowe—to teach. Over 75 kids and 15 parents came for two hours to learn about engineering. "I'm doing this for him," said Jairay Mendez, pointing to his 6-year-old son Jairay. "Anything I can do to motivate him. Otherwise the street will get him." Parent participation is "part of the deal. If you want your child here, you're here," says Paulette. "Parents are looking for an equal playing field for their kids and we need to create an opportunity so they can be part of that," explains Paulette as a crowd of kids and parents filed in. "STEM is our overall focus this year and this program provides positive peer associations as well as exposing kids to skills they might not have access to otherwise," said Paulette. "This is how you build change. This is how you build community."



Jairay Mendez and his son learn the basics at an EiE program at Moulton Learning Center in Des Moines.

Coming Events

(More events listed at www.iowaSTEM.gov)

MAR 5	2013 Governor's STEM Advisory Council STEM Summit – Location: Iowa Events Center, Des Moines, IA. Register online at www.iowaSTEM.gov
MAR 8	South Central Regional Advisory Board Meeting – Location: Graham Annex, Central College, Pella, IA. 2:30 p.m. Contact: Kris Kilibarda, kris.kilibarda@drake.edu
MAR 11	Southwest Regional Advisory Board Meeting – Location: Room CC1, Southwestern Community College – Red Oak Campus, Red Oak, IA. 10 a.m. Contact: Beth Kulow, kulow@swccia.edu
MAR 14	Northwest Regional Advisory Board Meeting – Location: POET BioRefining, 4724 380 th St., Emmetsburg, IA. 2 p.m. Contact: Kari Webb, kwebb@iowalakes.edu
MAR 14	NICC Family STEM Festival – For 4 th – 6 th grade students and families. Location: NICC, Calmar. 4:00 – 7:30 p.m. For more information, go to: www.iexplorestem.org/northeast/calmar
MAR 16	Eastern Iowa Science and Engineering Fair – Location: Lindale Mall, Cedar Rapids. For more information, go to: www.eisef.org
MAR 26	North Central Regional Advisory Board Meeting – Location: TBA. 3:30 – 5:30 p.m. Contact: Lynne Campbell, lynnec@iastate.edu
APR 19-20	125th Annual Meeting of the Iowa Academy of Science – A conference promoting scientific education, research and public understanding of science. Location: Simpson College, Indianola, IA. Contact: Marcy Seavey, marcene.seavey@uni.edu

Send story ideas to:

Governor's STEM Advisory Council
214 East Bartlett Hall | UNI
Cedar Falls, Iowa 50614-0298
Telephone: 319.273.2959
info@iowaSTEM.gov

Legislators Learn of STEM Impact Statewide



The Lady Bugs, a Girl Scout troop and robotics team, show off their creation at the 2013 STEM Day at the Capitol.

The fourth annual STEM Day at the Capitol, hosted by the Governor's STEM Advisory Council, showed lawmakers how a cross section of STEM-related programs are making a dramatic impact on Iowa students. Along with 140 business, education, nonprofit and afterschool professionals exuding passion for providing STEM opportunities to students, there were some 60 students on the Capitol Rotunda demonstrating to 300 legislators and other visitors the cool things they are doing in and out of the classroom in the name of STEM. From teams of students

showing off robots built and programmed to shoot baskets, to future farmers and chemists conducting tests to measure the "plant available" content within a soil sample, to students taking part in gaming design and IT cyber defense, students ages 6 to 18 were thrilled to 'show what they know.' Governor Branstad, Council co-chair University of Northern Iowa President Ben Allen, Council ex-officio members Senator Chelgren, Representative Byrnes and Representative Steckman addressed the crowd, voicing their support for STEM and its necessity for Iowa's future. Special thanks go to event sponsors - John Deere, Pella Corporation and Rockwell Collins - for making this event possible. Mark your calendar for February 13, 2014, to attend next year's STEM Day at the Capitol.

National and State Indicators Monitor Iowa STEM

The Iowa STEM Indicators System (ISIS) provides benchmarks related to a variety of sub-topics in the area of STEM education and workforce development. Data from the National Assessment of Educational Progress (NAEP), Iowa Assessments and ACT, Inc. were recently reviewed, along with summaries from the 2012 Iowa Department of Education's Annual Condition of Education Report. On the 2011 National Assessment of Educational Progress (NAEP) mathematics assessment, Iowa 4th and 8th graders scored higher than the national average. In 2010-2012, 76 percent of Iowa 8th graders were proficient on the Iowa assessments mathematics test. Switching to science achievement, Iowa 4th and 8th graders also scored higher than the national average on the NAEP science test. In 2010-2012, 80 percent of Iowa 8th graders were proficient on the Iowa Assessment science test. However, in both science and mathematics tests, there are disparities in the percent of underrepresented students who meet the proficiency benchmarks. On the 2010-2012 Iowa Assessments, a much lower percentage of African American, Hispanic, and American Indian met the benchmark than white students. These disparities persist on ACT scores as well; a greater proportion of white students meet the mathematics and science college-readiness benchmarks on the ACT subject tests than their African American, Hispanic and American Indian counterparts. National and state standardized mathematics and science test scores suggest that Iowa students are doing well. But there are disparities in achievement: some Iowa students are consistently falling behind in STEM achievement. These and a plethora of other indicators are being monitored for effect on the state's STEM initiative. A preliminary glimpse into findings will be presented at the STEM Summit on March 5.



Disa Cornish, Ph.D., is the Program Evaluation Manager, at the Center for Social & Behavioral Research Program at UNI.

Lights – Camera – ACTION! STEM Film Contest



First year public awareness for the state's STEM initiative is being channeled through our best advocates – learners! Iowa youth ages 10 to 18 are invited to participate in a statewide STEM Film Festival depicting the excitement of STEM in 90 seconds. Samples are posted to <http://tinyurl.com/ajupy8u>. Student films can be dramatic,

humorous, action packed, motivational, illustration/graphics or a commercial. The chosen videos will be showcased at Hoyt Sherman Place in Des Moines on May 5, 2013. Awards will be given for Best Motivational STEM Message, Encouraging Student Diversity in STEM, Best Use of Technology and many more. Thanks to Google, Inc., for providing a scholarship for winners. For more information regarding rules and registration, go to: www.IowaSTEM.gov.

News Briefs

Lt. Governor Kim Reynolds Featured Speaker as Leader in STEM – As Women's History Month begins, Lieutenant Governor Kim Reynolds, named one of the '100 Women Leaders in STEM' by STEMConnector™, will share her story on the TownHall Conference Call hosted by STEMConnector™ on March 6 from 1:00-2:30 p.m. EST. She will speak about the obstacles she has overcome, the triumph she has found and how the Iowa STEM initiative is helping get girls involved. To attend the virtual conference, RSVP to <http://www.stemconnector.org/townhall>.

Calling All STEM Judges – The State Science and Technology Fair of Iowa is in need of 350 junior high judges and 100 high school judges all day on April 5, 2013. Roughly 600 students will be attending the fair and judges are needed to help critique exhibits and help teach students how to improve their research. If you have questions, contact Vicki Speake at speake@iastate.edu. To judge, register at <http://tinyurl.com/c9e35pn>

Iowa Public Television Needs Your Input – Iowa Public Television (IPTV) has been awarded a grant to produce a new series of web-based curricula. The program, geared toward 9-12 grade students, will emphasize subject areas of agriculture and STEM, along with others. This resource will be available completely free to all educators. IPTV is looking for advice for the type of curriculum to be put in place for maximum benefit to educators. To take the survey, visit <http://www.surveymonkey.com/s/marketto-marketclassroom>

Students Scholarships Available for Iowa Youth Institute – World Food Prize Iowa Youth Institute will be held on April 29, 2013, on the Iowa State University campus. This event will be about learning the role that science, technology, engineering and mathematics plays in global and local challenges. Students must write an essay about hunger in a developing country and propose solutions to the hunger problem. Guidelines found at www.worldfoodprize.org/iowayouth. All essays must be submitted by April 1. Questions? Contact Catherine Swoboda at cswoboda@worldfoodprize.org.